

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-7 (Cancelled).

8. (Currently Amended) A two-part acrylic structural adhesive exhibiting improved T-peel strength on ~~galvanized steel~~ metal surfaces and cures at ambient conditions, comprising:

in a first package from about 10 to about 90 percent by weight of at least one ethylenic unsaturated methacrylic ester selected from the group comprising

1) C₃-C₁₀ alkyl monosubstituted, a C₁-C₆ alkyl disubstituted, a C₁-C₄ alkyl tri-substituted, [[and]] or a C₁-C₄ alkyl tetra-substituted cyclohexyl methacrylate, or combinations thereof, wherein the substituents are in one or more of either the 3, 4, and/or 5 ring position and group

2) linear or branched C₄-C₁₀ branched alkyl methacrylates; and

from about 10 to about 80 percent by weight of a toughener,

an adhesion promotor; and

in a second package, a bonding activator and optionally an epoxy resin.

9. (Original) The adhesive of claim 8 wherein said second package further comprises from about 3 to about 6% by wt. of an epoxy resin.

10. (Currently Amended) The adhesive of claim 8, wherein said ethylenic unsaturated methacrylic ester comprises is selected from the group consisting of 3,3,5-trimethylcyclohexyl methacrylate, 4-tert-butylcyclohexyl methacrylate, 3,3,5,5-tetramethylcyclohexyl methacrylate, or 3,4,5-trimethylcyclohexyl methacrylate, or combinations thereof bornyl (C₁₀H₁₇) methacrylate, isobornyl methacrylate, and (isopropyl methyl) methacrylate.

11. (Withdrawn) A two-part structural adhesive, that is capable of curing at ambient conditions and comprises: in an A-side

- (a) 10-90, preferably 20-70, weight percent of an olefinic monomer selected from the group consisting of (meth)acrylic acid; esters, amides or nitriles of (meth)acrylic acid; maleate esters; fumerate esters; vinyl esters; conjugated dienes; itaconic acid; styrenic compounds; and vinylidene halides;
- (b) 10-80 weight percent of the primary toughener;
- (c) 0-15 weight percent of the auxiliary toughener;
- (d) 0-20, preferably 2-10, weight percent of a phosphorus adhesion promotor containing one or more olefinic groups,
- (e) 0.05-10, preferably 0.1-6, weight percent of at least one reducing agent which is interactive with an oxidizing agent to produce free radicals which are capable of initiating and propagating free radical polymerization reactions; and
in a B-Side a bonding activator containing an oxidizing agent of a ambient temperature-active redox couple catalyst system, and from about 3% to about 6% by wt. on total weight of A and B sides, of an epoxy resin.

12. (Withdrawn) An adhesive composition according to claim 8 wherein the primary toughener comprises an olefinic-terminated liquid elastomer produced form a hydroxyl-terminated polyalkadiene.

13. (Withdrawn) An adhesive composition according to claim 8 wherein the auxiliary toughener is present and comprises an A-B-A block copolymer wherein the A block is selected from styrene, ring alkylated styrene or a mixture thereof and the B block is an elastomeric segment.

14. (Withdrawn) An adhesive composition according to claim 8 wherein the auxiliary toughener is present in an amount of about 1 to 10 weight percent.

15. (Withdrawn) An adhesive composition according to claim 8, wherein the primary toughener comprises an olefinic-terminated liquid elastomer produced from a hydroxyl-terminated polyalkadiene, and containing a secondary OH group.

16. (Withdrawn) An adhesive according to claim 8 wherein the reducing agent is selected from N,N-diisopropanol-p-chloroaniline; N,N-diisopropanol-p-bromoaniline; N,N-diisopropanol-p-bromo-m-methylaniline; N,N-dimethyl-p-chloroaniline; N,N-dimethyl-p-bromoaniline; N,N-diethyl-p-chloroaniline; and N,N-diethyl-p-bromoaniline.

17. (Withdrawn) An adhesive according to claim 8 wherein the primary toughener comprises an olefinic-terminated liquid elastomer produced from a hydroxyl-terminated polyalkadiene and the auxiliary toughener comprises an A-B-A block copolymer wherein the A block is selected from styrene, ring alkylated styrene or a mixture thereof and the B block is an elastomeric segment derived from a conjugated diene or olefin.

18. (New) The adhesive composition of claim 8, wherein the weight ratio of the first package to the second package is from about 4 to about 10.

19. (New) The adhesive of claim 18, wherein said toughener is a blend containing a major amount of a first toughener having a weight average molecular weight less than about 18,000 and a minor amount of a second toughener having a weight average molecular weight greater than about 18,000;

including said epoxy resin, wherein the amount of said epoxy is from about 3% to about 6% by weight based upon a total weight of said first package and said second package; and

wherein said bonding activator is an oxidizing agent comprising an organic peroxide, a diacyl peroxide, a hydroperoxide, a perester, or a ketone hydroperoxide, or combinations thereof.

20. (New) The adhesive of claim 19, wherein said adhesion promoter is a mono-ester of phosphinic acid or a mono- or a di-ester of phosphonic acid or a mono- or di-ester of phosphoric acid having one unit of vinyl or allylic unsaturation;

wherein said ethylenic unsaturated methacrylic ester comprises 3,3,5-trimethylcyclohexyl methacrylate, 4-tert-butylcyclohexyl methacrylate, 3,3,5,5-tetramethylcyclohexyl methacrylate, or 3,4,5-trimethylcyclohexyl methacrylate, or combinations thereof; and

wherein the weight ratio of the first package to the second package is about 10.

21. (New) The adhesive of claim 20, wherein said first toughener comprises a glycidal methacrylate terminated carboxyl terminated butadiene-acrylonitrile copolymer, and wherein said second toughener comprises an ABA block copolymer where A is derived from styrene, alpha-methyl styrene, or t-butyl styrene and B is derived from a conjugated diene or isobutylene.

22. (New) The adhesive of claim 21, wherein said adhesion promoter is hydroxyethylmethacrylate phosphate, and wherein said bonding activator is benzoyl peroxide.

23. (New) The adhesive of claim 20, wherein said first toughener comprises an olefinic-terminated polyalkadiene having at least one carboxy ether linking group and at least one nascent hydroxyl group that is capped with a monoisocyanate, and wherein said second toughener comprises an ABA block copolymer where A is derived from styrene, alpha-methyl styrene, or t-butyl styrene and B is derived from a conjugated diene or isobutylene.